REMARKS

The Office Action dated May 24, 2006, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 6 and 10 have been amended to more clearly define the invention. No new matter has been added, and no new issues are raised which require further consideration and/or search. Claims 1-13 are submitted for consideration.

Claims 1-13 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, 6 and 10 have been amended to overcome this rejection. Therefore, Applicants request that this rejection be withdrawn.

Claims 1, 6 and 10 were rejected under 35 U.S.C. 103(a) as being obvious over European Patent No. 0 572 145 A2 to Thompson in view of U.S. Patent No. 6,512,773 B1 to Scott. According to the Office Action, Thompson teaches all of the elements of claims 1, 6 and 10 except for a counter to determine the number of bytes of a packet after the header has been removed. Thus, the Office Action uses Scott to cure the deficiencies of Thompson to yield the combination of elements recited in claims 1, 6 and 10. The rejection is traversed as being based on references that neither teaches nor suggests the novel combination of features clearly recited in independent claims 1, 6 and 10.

Claim 1, upon which claims 2-5 depend, recites a network device that is configured to prevent data misalignment of a data packet containing extra header bytes.

The network device includes an ingress module having an input interface to receive at least one cell of the data packet, wherein a header cell of the at least one cell includes a header and packet data information, and a header detector configured to detect the header cell of the data packet and remove the header from the header cell of the data packet. The network device also includes a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell. The network device further includes an insertion module configured to insert null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes. The network device also includes an extraction module configured to remove the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device.

Claim 6, upon which claims 7-9 depend, recites a method of preventing data misalignment of a data packet containing extra header bytes. The method includes receiving at least one cell of the data packet at an input port of a network device, wherein a header cell of the at least one cell includes a header and packet data information, and detecting the header cell of the data packet. The method also includes removing the header from the header cell of the data packet and determining whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell. The method further includes inserting null bytes

into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and forwarding the modified cell of the data packet to an output port. The method also includes removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device.

Claim 10, upon which claims 11-13 depend, recites a network device configured to prevent data misalignment of a data packet containing extra header bytes. The network device includes receiving means for receiving a cell of the data packet at an input port of the network device, wherein a header cell of the at least one cell includes a header and packet data information, and detecting means for detecting the header cell of the data packet. The network device also includes header removing means for removing the header from the header cell of the data packet and determining means for determining whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell. The network device further includes inserting means for inserting null bytes into the header cell packet to form a modified header cell of the data packet if the counter determines that the cell of the data packet does not satisfy the multiple of the predetermined number of bytes and forwarding means for forwarding the modified cell of the data packet to an output port. The network device also include null byte removing means for removing the null bytes

from the modified header cell of the data packet as a modified cell of the data packet exits the network device.

As will be discussed below, the cited prior art references of Thompson and Scott fail to disclose or suggest the elements of any of the presently pending claims.

Thompson teaches a computer system with a processor, a cache, a memory and a network adapter. The network adapter generates and inserts network data checksums. In the outbound direction, the processor provides checksum control information to the network adapter and the network adapter calculates the checksum and inserts the checksum into the proper location within the packet before transmitting the packet on the network. In the inbound direction, the network adapter decodes the packet header, programs the checksum control information directly into internal registers, calculates the checksum and inserts the checksum into the proper location within the packet before transmitting the packet on the memory. The network adapter also automatically separates headers and data during transfer of incoming packets from the adapter to the memory. The network data further performs alignment of network headers by inserting pad bytes based on specific values found in the network link header. Col. 3, line 1-Col 4, line 50.

The network adapter is connected to the network through a front plane controller that provides transmission and reception of data packets to and from the network. For outbound transfers, the front plane controller unpacks the words from a DMA bus, looks at the first byte of the output stream, which contains a count of how many pad bytes were inserted in the packet and strips off the pad bytes. Col. 6, lines 35-46.

Scott teaches an improved system and method for transporting information over a communication channel. Scott uses a first frame 100 which includes a payload that includes user data PDU to which is prepended by a 4-octet ATM header that indicates that the frame is a low overhead cell frame. A trailer is also appended to the frame. Col. 8, lines 18-37. Scott also uses a second frame 150 which includes one of a plurality of 52-octet ATM cells to which is added a header, which indicates that the payload is framed cells, and a trailer. Col. 9, lines 10-27. The system includes a central transceiver which receives either frame 100 or 150 from a remote transceiver over a subscriber line. Figure 5C illustrates the steps performed at the central processor to implement a SAR (segmentation and reassembly) process. First, the payload is processed from frame 100 (block 231) and the number of octets of the user data PDU of the payload is counted (block 232). A user-to-user field and a common part indicator field are formed for the AAL5 frame (block 234). If the user-to user field and the common part indicator field are not included in the header or trailer, the default "0" is used. Pad characters are added to make the AAL5 frame equal an integer number of 48 octet cells (block 236). The 32-bit cyclic redundancy check of the AAL5 frame is calculated (block 237) and the AAL5 frame is segmented into an integer number of 48 octet cells (block 238). Thereafter, the ATM header from the payload is extracted (block 239). A HEC is added to the 4 octet ATM header to form a 5 octet ATM header (block 241) which is prepended to the 48 octet cells (block 242). Col. 10, lines 16-58.

Applicants submit that the combination of Thompson and Scott simply does not teach or suggest the combination of features clearly recited in claims 1, 6 and 10. Claims 1, 6 and 10, in part, recite inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device. On page 6, the Office Action alleges that Thompson discloses inserting null bytes into the cell of the data packet to form a modified cell of the data packet if the CPU determines that the header/data split is not on an even byte boundary. However, Applicant submits that there is no teaching or suggestion in Thompson of a packet that includes a plurality of cells, including a header cell with header and packet information. Thus, there is no teaching or suggestion in Thompson of modifying only the header cell of the packet in order to align all of the other cells of the packet. Thompson merely teaches that the network adapter splits that packet data from the header and pads the data to ensure that the beginning of the data portion of the packet is aligned with a memory page portion. See at least Col. 4, lines 25-33 of Thompson. Thompson also discloses that the network adapter aligns the headers of the header portion of the packet by inserting pad bytes based on specific values found in the network link header. However, upon review, Thompson simply does not teach or suggest inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data

packet does not satisfy the multiple of the predetermined number of bytes, as recited in claims 1, 6 and 10.

The Office Action also correctly indicated that Thompson does not teach or suggest the counter recited in claims 1, 6 and 10, but cites Scott as curing this deficiency. Scott simply does not cure the deficiencies of Thompson, as noted above. There is simply no teaching or suggestion in Scott of inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes, as recited in claims 1, 6 and 10. Figure 4 and Col. 10, lines 15-50 of Scott merely disclose that a frame includes a header portion and a payload portion. There is no teaching or suggestion in Scott of dividing the frame into a number of cells, with the header cell including header and data portions. As such, there is no teaching or suggestion in Scott of inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes, as recited in claims 1, 6 and 10. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Thompson nor Scott, whether taken singly or combined, teaches or suggests each feature of claims 1, 6 and 10.

Claims 2-4, 7-8 and 11-12 were rejected under 35 U.S.C. 103(a) as being obvious over Thompson in view of Scott and further in view of U.S. Patent No. 6,567,413 B1 to Denton. According to the Office Action, Thompson and Scott teach all of the elements

of claims 2-4, 7-8 and 11-12 except for teaching that the aggregator interfaces with an Ethernet and SPI-4 communication system, that the aggregator is configured to interface between a twelve 1-Gigabit port and one 12 Gigabit/s SPI-4 uplink and that the network device includes a network switch. Therefore, the Office Action combined the teachings of Denton with Thompson and Scott to yield all of the elements of claims 2-4, 7-8 and 11-12. The rejection is traversed as being based on references that neither teaches nor suggests the novel combination of features clearly recited in independent claims 1, 6 and 10, upon which claims 2-4, 7-8 and 11-12 depend.

Denton also does not cure the deficiencies of Thompson and/or Scott, as outlined above. Denton teaches an optical networking module that is formed with an integrated module including optical, optical-electrical and protocol processing components and complementary software. Each of claims 2-4, 7-8 and 11-12 depend on claims 1, 6 and 10 respectively, and thus, incorporates all of the elements of the independent claims. As such, each of claims 2-4, 7-8 and 11-12 include the element of inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device, as recited in claims 1, 6 and 10.

There is simply no teaching or suggestion in Denton inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the

counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device, as recited in claims 1, 6 and 10. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Thompson, Scott nor Denton, whether taken singly or combined, teaches or suggests each feature of claims 1, 6 and 10 and hence dependent claims 2-4, 7-8 and 11-12, thereon.

Claims 5, 9 and 13 were rejected under 35 U.S.C. 103(a) as being obvious over Thompson in view of Scott and further in view of U.S. Patent No. 6,697,873 B1 to Yik. According to the Office Action, Thompson and Scott teach all of the elements of claims 5, 9 and 13 except for teaching that the medium access control protocol module has a MAC address for transmitting the modified cell of the data packet and a layer two switching module configured to build a table for forwarding rules upon which the MAC address exists. Therefore, the Office Action combined the teachings of Yik with Thompson and Scott to yield all of the elements of claims 5, 9 and 13. The rejection is traversed as being based on references that neither teaches nor suggests the novel combination of features clearly recited in independent claims 1, 6 and 10, upon which claims 5, 9 and 13 depend.

Yik also does not cure the deficiencies of Thompson and/or Scott, as outlined above. Yik teaches an apparatus and method for storing and searching computer node addresses in a computer network system. Each of claims 5, 9 and 13 depend on claims 1,

6 and 10 respectively, and thus, incorporates all of the elements of the independent claims. As such, each of claims 5, 9 and 13 include the element of inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device, as recited in claims 1, 6 and 10.

There is simply no teaching or suggestion in Yik of inserting null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device, as recited in claims 1, 6 and 10. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Thompson, Scott nor Yik, whether taken singly or combined, teaches or suggests each feature of claims 1, 6 and 10 and hence dependent claims 5, 9 and 13, thereon.

Furthermore, Applicants continue to respectfully submit that the Office Action has pieced together four references to teach the claimed invention. However, MPEP 2143.01 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ 2d 1430 (Fed. Cir. 1990)."

MPEP 2143.01 further instructs that "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.'" Applicants respectfully submit that the cited references do not provide such a suggestion or motivation. Applicants submit that the only motivation to piece together the four references of the Office Action is found in Applicants' own application. MPEP 2141, under the heading "Basic Consideration Which Apply to Obviousness Rejections," points out that "the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention." (See also Hodosh v. Block Drug Co., Inc. 786 F.2d 1136, 229 USPQ 182 (Fed. Cir. 1986).) The Federal Circuit has clearly held that "the motivation to combine references cannot come from the invention itself." Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc., 21 F.3d 1068, 30 USPQ 2d 1377 (Fed. Cir. 1993).

In view of MPEP 2144.03, absent any teaching or suggestion in the prior art to adapt the teachings of Thompson to meet the claimed invention, and because the rejection lacks evidence of a teaching or suggestion that the features would have been obvious to one of ordinary skill, the rejections under 35 U.S.C. §103(a) are improper. Accordingly, Applicants respectfully submit that the rejections under 35 U.S.C. §103(a) should be withdrawn and Applicants respectfully request allowance of claims 1-13.

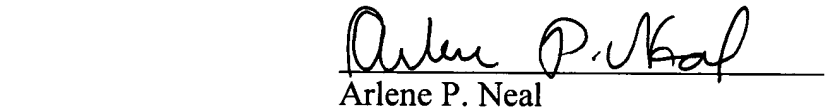
As noted previously, claims 1-13 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore

respectfully requested that all of claims 1-13 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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